Box 7

RECENT DEVELOPMENTS IN EURO AREA PRODUCTIVITY

This box examines the euro area's recent productivity performance, concentrating on developments since 2007, reviewing the importance of sectoral and country developments in explaining the recent slowdown before comparing the euro area's productivity performance with US developments.

The euro area's recent productivity performance

Between 2003 and 2006 euro area productivity growth (defined as output per person employed) averaged 1.3% year on year. Since the start of 2007, however, euro area productivity growth has slowed significantly, turning negative in the third quarter of 2008.[1] The latest national accounts releases show some quarter-on-quarter improvement but, in year-on-year terms, productivity continued to contract in 2009, falling by 2.9% in the second quarter, compared with a fall of 3.6% in the first quarter. These rates are unprecedented in the period since the launch of EMU.

The fall in productivity reflects the fact that the exceptionally large contraction in output experienced during the recent downturn was not followed by corresponding cuts in headcount (see Chart A). Indeed, employment has remained resilient, in part reflecting the high degree of employment protection for permanent workers, as well as an intensified use of shorter working hours among

1 While the onset of the recent financial market turmoil clearly exacerbated the sharp contraction in the euro area's productivity performance seen in recent quarters, in fact, the financial crisis did not entirely precipitate the slowdown in productivity growth, which has shown a continual deceleration since the fourth quarter of 2006.

Chart A Growth of euro area GDP, employment and productivity per person employed

(annual percentage changes)

Sources: Eurostat and ECB calculations.

Chart B Growth of GDP, employment and productivity in the three largest euro area economies

(annual percentage changes)

Sources: Eurostat and ECB calculations.
Notes: The euro area 3 refers to Germany, France and Italy. Data on hours worked for France are national accounts estimates for 2008 and 2009.

employees. The latter in part reflects measures to support short-time working arrangements introduced or extended by many national governments in response to the financial market turmoil. Such measures may be beneficial if the downturn is expected to be temporary, mainly demand-driven and unlikely to require any major sectoral reallocation of resources in the economy. However, it may carry risks over the longer term by preventing an efficient reallocation of resources across sectors.[2]

Given the heavy reliance on measures supporting adjustments in hours worked,[3] it is most meaningful to calculate productivity in terms of output per hour worked. Since no quarterly statistical series of hours worked is currently available from national accounts sources for the euro area as an entity, an approximation is necessary, based on aggregations for the three largest euro area economies, as shown in Chart B. This suggests that the fall in productivity was significantly weaker when measured in hours worked than when measured by employment. Nevertheless, these data confirm a rather sharp contraction in euro area hourly labour productivity.[4]

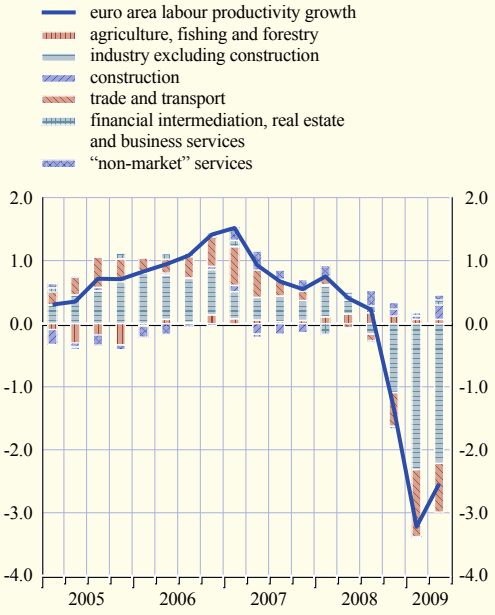
Sectoral and country developments

For the euro area as a whole, the sharp decline in labour productivity per person employed observed since the third quarter of 2008 has been largely driven by developments in the industrial sector

2 Moreover, there may be increased hourly labour costs for firms to the extent that compensation is not adjusted in line with hours worked.
3 See the box entitled "Labour market adjustments during the current contraction of economic activity" in the June 2009 issue of the Monthly Bulletin.
4 Data on hours worked for France are national accounts estimates for 2008 and 2009.

Chart C Euro area productivity growth per person employed and sectoral contributions

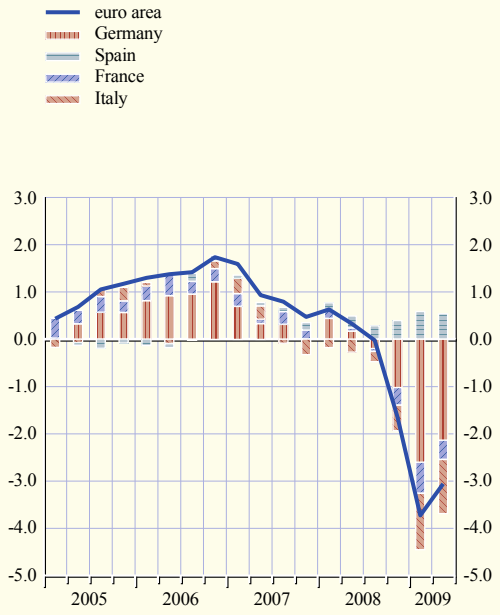
(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Chart D Euro area productivity growth per person employed and country contributions

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: Contributions do not sum to the euro area total, owing to the omission of other countries.

(excluding construction) and, to a somewhat lesser extent, in the private non-financial services sub-sector classified as "trade and transport".[5] This reflects the typically greater cyclicality of output in these sectors to changes in economic conditions, but it also demonstrates the apparent reluctance of firms in these sectors to adjust headcount in line with the strong changes in domestic and international demand observed over recent quarters. In contrast, over the last quarters for which data are available, several sectors appear to have contributed positively to aggregate euro area productivity growth – notably construction and, to a lesser degree, the financial and business services sector – largely as a consequence of the higher degree of labour shedding seen in these sectors (see Chart C).

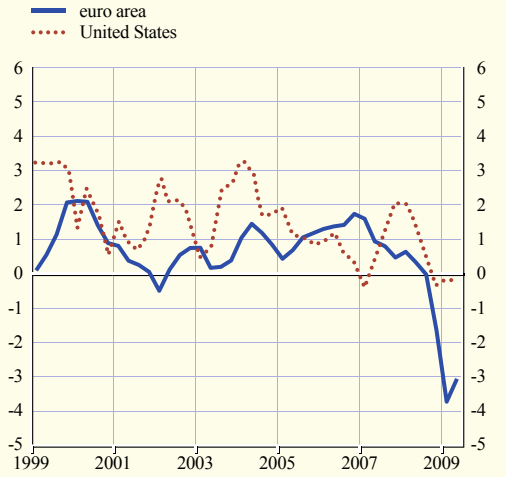
Beyond these sectoral developments, there are important cross-country differences. Chart D illustrates the contributions to the euro area aggregate of the four largest euro area economies. The extensive use of short-time working arrangements, particularly by the industrial sectors in Germany and Italy, has had a heavy impact on productivity developments per person employed in these countries. Lower reliance on such schemes in Spain and, to a lesser extent, in France, in combination with a greater reliance on traditional headcount adjustments, has yielded markedly different productivity patterns. The impact of the shedding of a high proportion of workers on temporary contracts in Spain has even been associated with an acceleration in productivity growth recently, according to national accounts statistics.

Comparisons with developments in the United States

Chart E compares productivity developments in the euro area with those in the United States. Over the past decade, US productivity growth (per person employed) averaged 2.1% per year, compared with the euro area average of 1.1% per year. Successive declines in US activity since the mid-2000s, followed by a sharp contraction early in 2007, pushed US productivity into negative territory in the first quarter of that year. The decline in the rate of economic growth precipitated a substantial reduction in US employment and, subsequently, a significant rebound in US productivity growth (per person employed). Thus, despite a further considerable slowdown since mid-2008, US productivity growth has remained broadly positive since the second half of 2007 in contrast with significant contractions in euro area productivity.[6] These results hold true

Chart E Productivity growth per person employed in the euro area and the United States

(annual percentage changes)



Sources: Eurostat, OECD, US Bureau of Labor Statistics and ECB calculations.

5 Quarterly sectoral and country developments for the euro area as a whole are available only on a per person employed (not per hour worked) basis. In the national accounts, the "trade and transport" sub-sector comprises a broad range of private non-financial services, including wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; hotels and restaurants; and the transport, storage and communication sectors.

6 Between the third quarter of 2007 and the second quarter of 2009, the US economy contracted by around 3.2%, accompanied by a rapid and substantial reduction in employment of around 3.7%. Over the same period, euro area output declined by 3.8%, while employment fell by 1.0%.

Labour productivity growth per hour worked and contributions in the euro area and the United States

(annual percentage changes; percentage point contributions)

	Euro area					United States				
	Growth in labour productivity per hour worked	Contributions			TFP	Growth in labour productivity per hour worked	Contributions			TFP
		Capital deepening	*Of which:*				Capital deepening	*Of which:*		
			Capital stock	*Total hours worked*				*Capital stock*	*Total hours worked*	
1999-2008	1.1	0.6	*1.0*	*-0.4*	0.6	2.1	1.0	*1.2*	*-0.2*	1.1
of which:										
1999-2002	1.5	0.6	*1.0*	*-0.4*	0.9	2.8	1.2	*1.3*	*-0.1*	1.5
2003-2006	1.1	0.6	*0.9*	*-0.3*	0.6	2.0	0.9	*1.3*	*-0.4*	1.1
2007	1.0	0.3	*1.1*	*-0.8*	0.7	1.4	0.9	*1.2*	*-0.3*	0.5
2008	0.0	0.7	*1.0*	*-0.3*	-0.7	1.0	1.2	*0.9*	*0.2*	-0.2

Sources: Eurostat, European Commission AMECO database and ECB calculations.

irrespective of whether productivity is measured per person employed or per hour worked, although the gap is slightly smaller when measured per hour worked.[7]

From a longer-term perspective, employment developments are obviously only part of the explanation for the gap in labour productivity growth observed between the euro area and the United States.[8] The table shows the extent to which US productivity growth has exceeded that of the euro area throughout the decade since 1999, and points to two sources of this disparity. Over this period, capital deepening – defined as the sum of the contributions from changes in the capital stock and changes in total hours worked – has remained significantly higher in the United States than in the euro area, contributing around 1.0 percentage point per year, on average, to productivity growth in the United States, compared with just 0.6 percentage point in the euro area. In addition, the contribution of total factor productivity (TFP) to overall productivity growth has also been much larger in the United States than in the euro area over this period, and appears to have been rather resilient in the United States, compared with an apparent collapse of euro area TFP growth in 2008.

While the policy of giving priority to employment-rich growth helps to explain the lower rates of capital deepening in the euro area in comparison with the United States, it does not explain the differences in the rates of TFP growth. In the euro area, greater participation – particularly of lower-skilled workers entering employment – is likely to have contributed to a reduction in productive efficiency. At the same time, a less flexible regulatory environment (for both labour and product markets) has resulted in lower investment in productivity-enhancing information and communication technologies (ICT). The interaction of these elements may also have led to a lower incidence of beneficial spillover effects from using ICT – for instance, for greater efficiencies in the organisation of production or higher rates of innovation – in the euro area.[9] In the most recent period, while doubtless much of the fall in TFP in both economies can be attributed to cyclical factors, the greater resilience of US TFP may also reflect wider-reaching

7 The comparison of hourly productivity growth is based on compilations for the euro area 3 (as in Chart B).
8 The data in this section are taken from the European Commission's Annual Macroeconomic (AMECO) database.
9 See, for instance, "Developments in euro area labour quality and their implications for labour productivity growth" in the October 2005 issue of the Monthly Bulletin; "Labour productivity developments in the euro area: results from the latest release of the EU KLEMS database" in the January 2008 issue of the Monthly Bulletin; and "Labour productivity developments in the euro area", *ECB Occasional Paper Series* No 53 (October 2006).

adjustments to shocks, supported by the more flexible institutional framework of the US labour market.[10]

Policy implications

The recent rebound in euro area activity will undoubtedly yield some improvements in euro area productivity growth in the coming quarters, as is already apparent from quarter-on-quarter data. Recent US developments have shown a rapid return to pre-downturn rates of productivity growth, both per person employed and per hour worked, as a result of a significant shake out of employment. Further long-term improvements in euro area productivity growth – aimed at enhancing the potential for the euro area to catch up with the higher rates of productivity growth observed in the United States – will be contingent on the capacity of the euro area economy to support firms' restructuring efforts and permit a wider sectoral reallocation of resources. This process of creative restructuring will require a timely dismantling of crisis measures – including the current heavy reliance on short-time working schemes – once the recovery is assured. Moreover, further structural reforms will be required to help ease labour market transitions and facilitate the reintegration of displaced workers back into jobs, for example through an easing of employment protection legislation for permanent workers and measures aimed at enhancing human capital acquisition. This would particularly benefit young Europeans, who have so far been disproportionately hit by the recession and who are potentially a source of dynamism and innovation. In product markets, measures aimed at enhancing competition, encouraging innovation and the implementation of efficient working practices, are required.

10 See, for instance, Bassanini, A., L. Nunziata and D. Venn, "Job protection legislation and productivity growth in OECD countries", *Economic Policy,* Vol. 24 (April 2009); and Duval, R., J. Elmeskov and L. Vogel, "Structural policies and economic resilience to shocks", OECD Working Paper No 567 (2006).